

WHAT IS CLAIMED IS:

1. A heat treatment apparatus for irradiating a substrate with flashlight to heat said substrate, comprising:

- 5 a light source having a plurality of flash lamps;
 a chamber provided below said light source;
 a holding member for holding a substrate in said chamber; and
 a light shield provided in said chamber, said light shield blocking light emitted from said light source from reaching a metal surface inside said chamber.

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2. The heat treatment apparatus according to claim 1,-
wherein said light shield is a quartz member with a quartz surface roughened by honing.

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3. The heat treatment apparatus according to claim 2,
wherein said chamber has a metallic side plate and a metallic bottom plate; and
wherein said light shield has a closed-end cylindrical shape for covering inner wall surfaces of said side plate and said bottom plate.

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4. The heat treatment apparatus according to claim 3,
wherein said light shield is a divided member in which a tubular portion and a base portion are separable.

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5. The heat treatment apparatus according to claim 4,
wherein said light shield covers said metal surface inside said chamber in its

entirety.

6. The heat treatment apparatus according to claim 5,

wherein said quartz surface has an outer surface and an inner surface, said outer
5 surface facing said metal surface inside said chamber and being roughed by honing, said
inner surface having greater smoothness than said outer surface.

7. The heat treatment apparatus according to claim 6,

wherein said outer surface has average surface roughness of not less than 0.2
10 μm .

8. A heat treatment apparatus for irradiating a substrate with light to heat said
substrate, comprising:

a light source having a plurality of lamps;

15 a chamber provided below said light source;

a holding member for holding a substrate in a substantially horizontal position
in said chamber; and

a liner removably provided to said chamber along a wall surface of said
chamber.

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9. The heat treatment apparatus according to claim 8,

wherein said liner has a closed-end cylindrical shape.

10. The heat treatment apparatus according to claim 9,

25 wherein said liner is a divided member in which a tubular portion and a base

portion are separable.

11. The heat treatment apparatus according to claim 10,
wherein said liner is a quartz member.

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12. The heat treatment apparatus according to claim 11,
wherein said plurality of lamps are flash lamps, and

said holding member comprises an assist heating element for preheating a
substrate held thereon.

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